

What is claimed is:

1. A system comprising:
a membrane module having an inlet connected to a feed line, the membrane module having a concentrate outlet coupled to a concentrate line, and the membrane module having a permeate outlet coupled to a permeate line, the permeate line communicating with a faucet; and
a flush reservoir communicatively coupled between the permeate line and the feed line;
wherein the system is configured such that after the faucet is turned off, a portion of permeate is delivered to the reservoir and then delivered to the inlet of the module to flush the module.
2. The system of claim 1, including a check valve between the permeate outlet and the faucet.
3. The system of claim 1, including an automatic shut-off valve coupled between the permeate line and the feed line and operative to open the feed line when the faucet is opened based on a pressure differential between the feed line and the permeate line.
4. The system of claim 1, including a check valve between the permeate line and the flush reservoir.
5. The system of claim 1, including a check valve between the reservoir and the feed line.
6. The system of claim 1, wherein the feed inlet delivers feed water to the module at about 75 psi or less.

7. The system of claim 1, wherein the reservoir has a volume of about 1 liter or less.
8. The system of claim 1, wherein there is not a permeate storage tank located between the permeate outlet and a faucet.
9. A system comprising:
 - a membrane module having an inlet connected to a feed water line, the membrane module having a concentrate outlet coupled to a concentrate line, and the membrane module having a permeate outlet coupled to a permeate line, the permeate line communicating with a faucet;
 - a control coupled between the permeate line and the feed line and operative to open the feed line when the faucet is opened based on a pressure differential between the feed line and the permeate line; and
 - a reservoir coupled between the permeate line and the feed line, wherein the reservoir is configured to temporarily fill with an amount of permeate after the faucet is closed and to deliver the amount of permeate to the module inlet via the feed line.
10. The system of claim 9, wherein the control includes a non-electric automatic shut-off valve.
11. The system of claim 9, wherein the feed line delivers water from a feed source at home water pressure conditions.
12. The system of claim 9, including a one-way check valve between the permeate line and the faucet and operative to maintain pressure in the line after the faucet is closed.

13. The system of claim 9, including a one-way check valve between the permeate line and the flush reservoir and operative to allow permeate flow to the flush reservoir only after the faucet is closed.
14. The system of claim 9, including a one-way check valve between the flush reservoir and the feed line and operative to allow flow from the flush reservoir to the feed line after the feed line is shut off by the control.
15. The system of claim 9, wherein there is not a permeate storage tank located between the permeate outlet and a faucet.
16. A method comprising:
- delivering a permeate from a permeate outlet of a membrane module to a faucet;
 - after the faucet is closed, delivering permeate to a flush reservoir from the permeate outlet; and
 - delivering the permeate in the flush reservoir to a feed water inlet of the membrane module to flush the membrane module.